

Loudoun County Strategic Watershed Management Solutions (SWMS) “Work Plan”

[illegible]

DOC Reference	Action Item/Task	Time Frame	Responsible Parties/ Coordinator	Partners	Resources Needed
	<ul style="list-style-type: none"> • Present the Declaration of Cooperation (DOC) to the BOS for their review and approval. • Present the DOC to the Planning Commission and technical committees (WRTAC, LUTC) for their information. • Present the DOC to the incorporated Towns for their review and approval. 		Steering Committee, County Administrator, and Dept of Building and Dev, Environmental Program Mgr..		
	3. Coordination with Towns -- The County should consider adding a provision to the MOU currently under development between it and incorporated Towns to enable and assist implementation of the watershed plan.		Environmental Program Mgr.	Steering Committee	
	4. Public-Private Partners -- Support County efforts to work with and encourage its private sector partners to continue their ongoing activities in the watersheds throughout both the planning and implementation phases of the watershed management planning process.		Environmental Program Mgr		
	5. Designate Watershed Manager/Coordinator - Request that the BOS create easy and efficient mechanisms for internal County coordination during the planning and implementation process by designating where leadership for watershed management coordination will reside, a critical factor for effective coordination. <ul style="list-style-type: none"> • For the short-term, request the BOS to designate either an existing Department or the Environmental Program Manager as the lead for the Watershed Planning effort. • For the long-term, given the likely increasing importance of watershed management in future years, request the BOS to create an Environmental Services Department in its long-term planning for County staff. 		Environmental Program Mgr., and County Administrator	Steering Committee	
	8. BOS Representation – Develop a protocol for the BOS and incorporated Towns to either (in order of preference) attend, or have representation, or be		Environmental Program Mang.,		

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	regularly informed during the Watershed Planning process. <ul style="list-style-type: none"> • Planning Commission -- The Planning Commission (PC) should be given the opportunity to participate and at a minimum should be kept informed throughout the process. 		County Administrator, and Steering Committee		
	6. Policies and Regulations – Work with the County to recommend changes to County regulations that do not support watershed protection. <ul style="list-style-type: none"> • Work with the County to place any policy recommendations that are applicable to the entire County on a separate and faster track for consideration by the BOS so that the policy recommendations are not on hold while the watershed plan is being finished. • Work with the County to place policy changes into the General Plan as proposed amendments, and where applicable, as amendments to the Zoning Ordinance and Facilities Standards Manual (FSM). 		Environmental Program Mgr., County Administrator, B&D	Steering Committee	
	7. Stormwater Permitting – Work with the County to utilize additional County programs in conjunction with the Stormwater program to address watershed problems while the Stormwater permitting program is under development.		Environmental Program Mgr.	Steering Committee	
	8. Dillon Rule – Work with the County to obtain clarification about alternative septic system under the Dillon Rule enlight of the different approaches being taken in Clarke and Fauquier Counties.		County Administrator, Environmental Program Mgr., County Atty	Steering Committee	
	9. Watershed Plan Progress Reports – Make progress reports to the decision-making bodies throughout the watershed management planning process, in consultation with one or two Supervisors as appropriate. Presentations to be made to: <ul style="list-style-type: none"> • The Board of Supervisors 		County Administrator, Environmental Program Mang., Steering Committee		

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	<ul style="list-style-type: none"> • The Planning Commission • Incorporated towns (the Coalition of Loudoun Towns (COLT) may be an appropriate venue for these presentations, and it may also be appropriate to provide presentations to joint meetings of Town Councils and Planning Commissions) 				
	10. Plan Evaluation – Develop a strategy for the County in collaboration with the Steering Committee to periodically revisit and update the Watershed Management Plans to ensure that they remain living documents.		Environ. Coord., Steering Committee		
	1. Inventory Stakeholders -- Create an inventory of County organizations that are stakeholders in the watershed plan, i.e., organizations whose work or mission relates to the goals of the watershed plan, including conservation and environmental interests, historic preservation, development, business, and agriculture.		Environ. Coord., Steering Committee, Education Subcommittee	Building & Dev.	
	2. Inform and Engage Citizens – Create ways that make it easy for Loudoun citizens to be informed, engaged, and involved in protecting and restoring water resources in order to enhance the value of the watershed management plans to citizens. <ul style="list-style-type: none"> • Form a cadre of speakers who are available to attend meetings of different stakeholder groups to reach citizens who might be difficult to reach otherwise to engage them in the planning process, • Conduct workshops and create other forums to inform citizens about watershed management needs and to engage citizens in watershed stewardship activities; 		Education Subcommittee		
	3. Educational and Outreach Materials -- Develop education and outreach materials to create a more informed citizenry and to raise awareness regarding watershed management needs including materials that address:		Education Subcommittee	LCSWCD	

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	<ul style="list-style-type: none"> Existing water quality and water protection regulations and the need for compliance; and Requirements for monitoring and maintaining septic systems for new septic owners to develop concrete skills and knowledge. 			Health Department	
	4. Website – Maintain a website that informs the public of the watershed management planning initiative and, ways that they can become involved and engaged in the planning and implementation process.		Education Subcommittee		
	5. Citizens as Resources – Create methods of using citizen volunteers to conduct some of the public education and outreach initiatives during the planning process to relieve the burden on County staff and to engage citizens in working with their neighbors.		Education Subcommittee		
	6. Teach Environmental Stewardship – Partner with organizations to develop curriculum materials to involve all schools and students, and use the schools as a forum to involve citizen in the planning process, watershed education, and stewardship activities.		Education Subcommittee	Loudoun School System	
	7. County Parks and Trails – Develop additional programs that use parks and streamside trails as venues for education and outreach to engage citizens in the planning and implementation process.		Education Subcommittee	Loudoun Parks and Rec	
	1. Data Management: <ul style="list-style-type: none"> Encourage the County to designate a new position or office with the task of providing central surface and ground water data coordination and management, and to assemble data and establish standard data collection and management protocols. Create a common database to store surface and ground water quality and quantity data from the many data collection entities working in the County. 		Steering Committee, Data Subcommittee Building & Dev, Data Subcommittee		

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	2. Watershed Mapping -- Inventory and map all water resources within the County's watersheds including wetlands.		OMAGI		
	3. GIS Data: Incorporate surface and ground water quality and quantity data, and other data as needed into the County GIS system and the County base maps. <ul style="list-style-type: none"> • Update watershed maps based on a predictive wetlands model. • Make GIS data available to the public in an understandable format. 		Data Subcommittee, Building & Dev.	County GIS and Mapping	
	4. Data Collection Protocols: <ul style="list-style-type: none"> • Adopt data collection protocols that have been used in existing studies, or from State-endorsed monitoring guidelines for all new data collection. • Examine the integrity of existing data carefully before using it in any assessment as not all existing data is relevant to the assessment's purpose, and some is old or perhaps faulty. 		Data Subcommittee, DEQ, EPA		
	5. Existing Data: <ul style="list-style-type: none"> • Establish a means to quickly gather and assess existing data and analyses including agencies such as the USGS and DEQ to avoid duplication of effort, and to incorporate the data into assessments and watershed characterization efforts. • Compile and analyze existing groundwater data to help predict impacts of different management options on groundwater. 		Building & Dev, Data Subcommittee		

WATER RESOURCE MONITORING PROGRAM (WRMP)					
A. Water Resource Monitoring – Phase I					
	1. Probabilistic Monitoring --- Work with the County to establish probabilistic-based (statistical) monitoring, applied Countywide, in order to provide baseline, and snapshot data on watershed conditions for tracking progress.		Technical Subcommittee		
	2. Stream Monitoring Reports -- Analyze and prepare monitoring data reports on a periodic basis to ensure relevant data are being collected and to inform stakeholders and the public of progress being made to accomplish the goals of the watershed management planning initiative.		Technical Subcommittee	LWW, LWC, LCSWCD, LCSA	
	3. Stream Flow Gauging – Work with the County to establish a flow gauge network to help monitor in-stream flow and the hydrological health of County streams and waterways.		Data Subcommittee	Building & Devel	
¹	4. Rain Gauging – Work with the County to install additional rain gauges to adequately document precipitation in the County.		Data Subcommittee	Building & Devel	
B. Water Resource Monitoring – Phase II					
	1. Trend Monitoring – Establish a network of trend monitoring stations to supplement the DEQ stations and support countywide assessment and subwatershed characterization, and to evaluate and update the Watershed Management Plans over the years.		Technical Subcommittee	Building & Devel	
	2. Detailed Field Surveys/Stream Assessment – Conduct additional field surveys in each subwatershed to develop updated and more detailed data needed to update the implementation plans designed to protect or restore priority stream segments identified in subwatershed plans. <ul style="list-style-type: none"> • Select a field survey protocol that will assess the pathways of runoff to streams, hydrological impacts of increased runoff, impacts on aquatic life, impacts on habitat, and geomorphological impacts, giving preference to the Center for Watershed Protection's RSAT protocol. 		Technical Subcommittee	Building & Devel	
	3. Ground Water:				

¹ Taken from Loudoun Building and Development, Water Resource Monitoring Work Plan, Task 2, paragraph 4.2

² Taken from Loudoun Building and Development, Water Resource Monitoring Work Plan, Task 3.1, paragraph 4.3.1

2	<ul style="list-style-type: none"> Establish 15 to 20 additional long-term monitoring wells and gauges to provide data needed for more sophisticated predictions of impacts of different management options on ground water. Install remote data collection probes or real-time telemetry equipment on additional monitoring wells. 		Technical Subcommittee	Building & Devel	
C. Water Resource Modeling – Phase I					
	<p>1. Surface Water Modeling – Work with the County to select a model that offers predictive guidance for aquatic, drinking, and recreational values of streams, specifically addressing at least sediment, nutrient, and flow variations (“flashiness”) in order to provide better information for decisions regarding water quality and quantity.</p> <ul style="list-style-type: none"> Select a least-cost predictive tool that does not require data beyond what is already available, that is simple, and can be used by County staff, with preference given to STEPL and GWLF models for water quality. Select a spreadsheet model to do “water balance accounting” in order to predict impacts of different management options on water quantity based on existing data. 		Technical Subcommittee	Building & Devel	
	<p>2. Ground Water Modeling – Work with the County to select a ground water model that offers predictive guidance for fecal nonpoint pollution and base flow, as well as answer questions regarding ground water availability in western portions of the County.</p> <ul style="list-style-type: none"> Develop a cooperative agreement with USGS to provide input and assistance in the County’s groundwater modeling and data synchronization efforts. 		Technical Subcommittee	Building & Devel	
	<p>3. Floodplains -- Obtaining existing floodplain modeling from FEMA to use to predict impacts of different management options on floodplains.</p>		Building & Devel	Technical Subcommittee	

D. Water Resource Modeling – Phase II					
	1. Water Quality and Quantity – Work with the County to inventory data available to decide which of the more sophisticated models would be most feasible to use giving preference to SWMM or HSPF. <ul style="list-style-type: none"> • Work with the County on using a flexible, selective approach to select models in which more sophisticated models would be used for more complex, difficult watersheds. 		Technical Subcommittee	Building & Devel.	
	2. Ground Water – Work with the County to develop tools for decision-making in the near-term with preference given to MOD-FLOW or SUTRA 3-D models. <ul style="list-style-type: none"> • Work with the County when more data becomes available, including geological data, to select a more refined model to make more refined calculations including conceptualizing the County’s ground water system. • Work with the County to establish a later Phase III modeling effort in which the County would eventually develop and use a ground water model that can predict availability of groundwater. 		Technical Subcommittee	Building & Devel.	
E. Watershed Management Plan Development					
	1. Watershed Planning – Work with the County to immediately begin watershed planning using currently available data at a minimum cost. <ul style="list-style-type: none"> • Design the plans to integrate land use policies and tools such as Zoning Ordinance, the Facilities Standards Manual, transportation planning, etc. • Design the plans to support compliance and enforcement of existing regulations. • Develop watershed planning strategies being mindful of Virginia’s Dillon Rule legal framework obtaining legal or expert opinion to resolve or clarify differing interpretations, such as inconsistent interpretations of court rulings. • Incorporate into the plans any TMDL regulations and guidelines. 		Technical Subcommittee	Building & Devel	
	2. Regional Plan: Prepare a Regional Watershed Plan, using existing data that is defined by the geographic boundaries of the watersheds in cooperation with		Technical Subcommittee	Building & Devel	

	<p>neighboring jurisdictions and regional authorities.</p> <ul style="list-style-type: none"> • Begin the regional planning process with Fairfax County who has begun developing watershed plans. • Continue the planning process with other authorities as the opportunity arises. 				
	<p>3. Major Watershed Plans -- Prepare Watershed Management Plans, using existing data that are defined by both the political boundaries of the County and watershed boundaries for the twelve major watersheds in Loudoun County.</p> <ul style="list-style-type: none"> • Provide communications and coordination regarding watershed plan development at the County-wide level. • Prepare plans for: (1) Broad Run, (2) Goose Creek, (3) Limestone Branch, (4) Catoctin Creek, (5) Dutchman's Creek and Piney Run, (6) Upper Bull Run, and (7) Cub Run. 		Technical Subcommittee	Building & Devel	
	<p>5. Subwatershed Implementation Plans:</p> <ul style="list-style-type: none"> • Develop a prioritization system for the development of subwatershed implementation plans based on criteria guidelines provided in the DOC that selects the "most vulnerable" watersheds based on projected future impacts, with preference given to headwater subwatersheds, drinking water sources, and vulnerability potential. • Prepare preliminary Subwatershed Implementation Plans that are defined by both subwatershed boundaries and characterization of the subwatershed that provide implementation strategies to protect and restore water quality and stream health in specific portions of the subwatershed. 		Technical Subcommittee	Building & Devel	
	<p>6. Authority for Implementation – Work with the County to specify and clarify who will implement each component of the Plan, by when, and who has designated authority for implementation.</p>		Environ Coordinator	Technical Subcommittee	
	<p>7. Concurrent Planning Approach – Work with the County to ensure that the regional, the 12 major watershed, and the subwatershed plans are developed in parallel, at the same time, using currently existing data, beginning as soon as possible.</p>		Technical Subcommittee	Building & Devel	
	<p>8. Updated Implementation Plans – Periodically revise the preliminary subwatershed implementation plans into more detailed, long-term implementation plans based on the detailed field survey results as they become</p>		Environ Coordinator, Technical		

	available.		Subcommittee		
	9. Incremental Implementation -- Work with the County to implement the subwatershed plans incrementally so that identified priority areas can be addressed first.		Environ Coordinator, Technical Subcommittee	Building & Devel	
G. Funding					
	1. Existing Funding – Work with the County to evaluate, prioritize, and possibly reallocate existing funding resources as necessary to support an efficient watershed planning process.		Funding Subcommittee, Environ. Coord	Building & Devel	
	2. Dedicated Funding – Work with the County to create a dedicated source of funding to ensure a successful Watershed Management Planning effort and to help meet new regulatory compliance requirements. <ul style="list-style-type: none"> • Earmark a portion of the “rollback” tax (the tax assessed when property land use change is designated). • Consider slowing the rate at which personal property taxes are assessed to lessen the reduction that is used to offset the increase in assessed value (“equalize less”) and consider earmarking a portion of that for watershed planning. 		Funding Subcommittee, Environ. Coord, County Administrator		
	3. Grant Funding -- Identify sources of grant funding and corporate sponsorship for both a short-term and long-term source of funding for watershed planning, but especially in the short-term while a long-term funding strategy is being created.		Funding Subcommittee		
	4. Targeted Funding -- Develop sources of funding for critical areas identified in the different phases of the watershed plans.		Funding Subcommittee		
	5. Bay Act Funding —Develop a White Paper regarding the possibility of Loudoun County adopting the Chesapeake Bay Preservation Act (CBPA), which may be a potential source of funding; giving careful consideration to any regulatory implications.		Funding Subcommittee, Environ. Coord, County Administrator		
	6. In-kind —Identify sources of significant financial contributions from in-kind sources such as citizen groups and the development community.		Funding Subcommittee		